



SACM and the RCRA Stabilization Initiative: Similarities of Principles and Applicability

Background: The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the corrective action provisions of the Resource Conservation and Recovery Act (RCRA) provide standards for the remediation of environmental media contaminated with hazardous substances or hazardous waste, respectively.¹ In both cases, prior to the U.S. Environmental Protection Agency's (EPA) development of the two subject reform initiatives, existing formal processes specified the level of site investigation required, the process for reaching a decision on the method of remediation, public participation in the decision process, and enforcement authorities that include orders and schedules of compliance. Traditionally, implementation of these processes has resulted in a great amount of time, effort, and money being expended before actual remediation began. Following criticism from the public and the regulated community, the EPA has proposed streamlining reforms for hazardous waste site cleanup under both CERCLA and RCRA that will begin remediation sooner with lower costs. The purpose of this Information Brief is to discuss the common goals, processes, and strategies of the Superfund Accelerated Cleanup Model (SACM) and the RCRA Stabilization Initiative.

Statutes: The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended.

The Resource Conservation and Recovery Act (RCRA), as amended.

Regulations: National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, (NCP), March 8, 1990.
Proposed 40 CFR 264, "Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities Proposed Rule" (Subpart S), Federal Register, July 27, 1990.

- References:**
1. "Managing the Corrective Action Program for Environmental Results: The RCRA Corrective Action Stabilization Effort," Memo from the Director, EPA, Office of Solid Waste and the Director, EPA Office of Waste Programs Enforcement to EPA Regional RCRA Waste Management Division Directors, U.S. EPA Office of Solid Waste and Emergency Response (OSWER), October 25, 1991.
 2. "Superfund Accelerated Cleanup Model (SACM)," Memo from the EPA Assistant Administrator for Solid Waste and Emergency Response to All EPA Superfund Staff, Managers, Regions, and HQ, U.S. EPA Office of Solid Waste and Emergency Response, April 7, 1992.
 3. "Region III Approach to Stabilization," Memo from the Director, U.S. EPA, Office of Solid Waste to the Director for RCRA Programs, Region III, U.S. EPA Office of Solid Waste and Emergency Response, May 4, 1992.
 4. "Guidance on Implementation of the Superfund Accelerated Cleanup Model (SACM) under CERCLA and the NCP," U.S. EPA Office of Solid Waste and Emergency Response, OSWER Directive 9203.1-03, July 7, 1992.

¹ The purpose of the response program implemented under the authority of CERCLA is to address threats to human health or the environment resulting from releases or potential releases of hazardous substances from abandoned or uncontrolled hazardous waste sites. RCRA hazardous wastes are a subset of CERCLA hazardous substances as defined at CERCLA § 101(14).

*References
(con't.):*

5. "EPA Superfund Accelerated Cleanup Model (SACM)," U.S. DOE, Office of Environmental Guidance (EH-231) Memorandum, October 21, 1992.
6. "Early Action and Long-Term Action Under SACM - Interim Guidance," U.S. EPA Office of Solid Waste and Emergency Response, OSWER Directive 9203.1-051, December 1992, Intermittent Bulletin, Volume 1, Number 2.
7. "Assessing Sites Under SACM - Interim Guidance," U.S. EPA Office of Solid Waste and Emergency Response, OSWER Directive 9203.1-051, December 1992, Intermittent Bulletin, Volume 1, Number 4.
8. "SACM Regional Decision Teams - Interim Guidance," U.S. EPA Office of Solid Waste and Emergency Response, OSWER Directive 9203.1-051, December 1992, Intermittent Bulletin, Volume 1, Number 5.
9. "Superfund Reform: EPA 30-Day Study and DOE Environmental Restoration Implications," U.S. DOE, Office of Environmental Guidance Report, (EH-231) DOE/EH-0303, February 1993.
10. "Presumptive Remedies: Policy and Procedures," U.S. EPA Office of Solid Waste and Emergency Response, OSWER 9355.0-4/FS, September 1993.
11. "Guidance on Accelerating CERCLA Environmental Restoration at Federal Facilities," Memo from the Assistant Administrator, Office of Enforcement and Compliance Assistance, U.S. EPA; the Assistant Administrator, Office of Solid Waste and Emergency Response, U.S. EPA; the Assistant Secretary for Environmental Management, U.S. DOE; and the Deputy Under Secretary for Environmental Security, U.S. Department of Defense to Addressees, August 22, 1994.
12. "Superfund Accelerated Cleanup Model: Summary of Regional Pilot Projects," U.S. Environmental Protection Agency, Office Solid Waste and Emergency Response (OSWER), August 1994.
13. "Streamlining Site Characterization Approach for Early Actions: Impact on Risk Assessment Data Requirements," U.S. DOE Office of Environmental Guidance, RCRA/CERCLA Division, EH-231 RCRA Information Brief, EH-231-025/1294, December 1994.
14. "RCRA Facility Stabilization Initiative," U.S. DOE Office of Environmental Guidance, RCRA/CERCLA Division, EH-231 RCRA Information Brief, EH-231-016/0295, February 1995.
15. "Remedial Investigation/Feasibility Study (RI/FS) Process, Elements, and Techniques Guidance," Prepared by the U.S. DOE Office of Environmental Guidance, RCRA/CERCLA Division (EH-231) and sponsored by the U.S. DOE Office of Program Support, Regulatory Compliance Division (EM-431), DOE/EH94007658, December 1993.
16. "Phased Response/Early Actions Guidance," U.S. DOE Office of Environmental Policy and Assistance, RCRA/CERCLA Division (EH-413), DOE/EH-0506, November 1995.
17. "RCRA Corrective Action Program Guide (Interim)" U.S. DOE Office of Environmental Guidance, RCRA/CERCLA Division (EH-231), DOE/EH-0323, May 1993.
18. "CERCLA Removal Actions Guidance," Prepared by the U.S. DOE Office of Environmental Guidance, RCRA/CERCLA Division (EH-231) and sponsored by the U.S. DOE Office of Environmental Restoration, Regulatory Integration Division (EM-431), DOE/EH-0435, September 1994.

What are SACM and the RCRA Stabilization Initiative?

EPA has established two programs that are intended to facilitate the cleanup of releases at both Superfund (CERCLA) response actions and RCRA treatment, storage, and disposal facilities. Their respective goals are to streamline the measures that traditionally have

been taken to achieve cleanup of releases and that have required redundant site evaluations, sampling, and public participation steps. EPA recognized that it was possible to reorder and combine many of the steps for CERCLA response actions and RCRA corrective actions within the framework of the existing regulations. Technical site evaluations (Remedial Investigations (RI) under CERCLA, or RCRA Facility Investigations (RFI))

could be directed to reach a decision on an initial remediation method; subsequently the remainder of research necessary to determine whether this method was appropriate for final remediation could be conducted.

Both the SACM and RCRA Stabilization Initiative programs enable DOE environmental restoration program managers to take prompt action to protect human health and the environment, achieve prompt risk reduction and arrest the spread of contamination at the worst sites while postponing the application of resources to sites that are appropriate for delayed action. Both reform efforts are also designed to respond to the criticism that decisions on remediation have required years regardless of the significance of the threat posed by the hazardous waste release.

The EPA Superfund Program provides funding and regulatory responsibility for hazardous substance remediation at private (i.e., non-federal) facilities. Initially, EPA's guidance on SACM (see ref. 2) applied only to the EPA Superfund Program. However, three Federal agencies have recently addressed the specific responsibilities of Federal Facilities in the joint EPA, DOD, and DOE memorandum *Guidance on Accelerating CERCLA Environmental Restoration at Federal Facilities*, in which signatories stated that the accelerated approach for streamlining Federal Facilities "will also be applicable to cleanups under RCRA" (see ref. 11). Note: SACM is the EPA's framework for instituting several streamlining reforms of the CERCLA program. Examples of derivative streamlining approaches that are based on similar fundamental principles and are pertinent to DOE facilities include: the Streamlining Approach for Environmental Restoration (SAFER), the Data Quality Objectives (DQO) process, and the phased response strategy (see ref. 16). Both the similarities and the differences between the components of the two subject programs are discussed in this Information Brief.

What are the common goals of SACM and The RCRA Stabilization Initiative?

- *Address the immediate high-risk problems first and defer final remediation until later.* In both programs, the goals are to achieve prompt risk reduction and to act as soon as possible to halt any expansion of contamination. Traditionally, after a release is discovered, the CERCLA response program specifies a detailed process of site

investigation, an analysis of potential remedial alternatives, and the implementation of the method of remediation. A similar process is followed under RCRA.

Under the SACM (and the NCP) and RCRA Stabilization Initiative, the thrust of the initial efforts is to promptly reduce risks and stop any further spread of contamination. The initial site evaluations will be directed towards identifying the limits and extent of contamination and the threat the contamination poses to human health and the environment. Once these conditions have been established, a decision will be made as to whether or not there is a threat of further contamination or exposure. If so, a strategy to arrest the spread of the contamination or limit exposure to it will be developed. Under CERCLA, it is called early actions (which includes removal actions, remedial actions, and interim actions) and under RCRA, this is called interim measures.

SACM embodies several principles and goals that include the following:

- Integrating traditional site assessment functions to allow continuous assessment for high-priority sites that proceeds until all necessary data are collected to screen sites or to support necessary response actions (see ref. 7).
- Combining activities to support both removal and remedial assessments.
- Initiating response action decisions as soon as the evidence indicates that early action is warranted.
- Addressing sites that pose the greatest threat first (see ref. 7).
- Improving coordination, communication, and integration of program authority, expertise, and tools to solve problems that arise across removal, site assessment, remedial, and community involvement program activities (see ref. 8).
- Taking long-term actions when there are conditions requiring extensive site characterization, where there are high costs, or

where it will take more than approximately 5 years to complete the work (see ref. 6).

Under RCRA Corrective Action, the overall goal of stabilization is to control or abate threats to human health or the environment from releases at RCRA facilities and to prevent or minimize the further spread of contamination while site assessment and long-term remedies are pursued (see ref. 14).

Pursuant to SACM and the RCRA Stabilization Initiative, DOE environmental restoration program managers should consider use of early actions (under SACM) and interim measures (under RCRA) if it is necessary to quickly control risks of exposure to, or limit further migration of, the contamination at their sites. Procedurally, the decision to initiate early actions/interim measures will be based generally on an evaluation of information gathered during the CERCLA Preliminary Assessment (PA)/Site Inspection (SI) or the RCRA Facility Assessment (RFA)/RFI. Early actions and interim measures are typically performed prior to or concurrent with the CERCLA RI/FS and RCRA RFI. However, decisions to implement early actions/interim measures may come at various stages of the CERCLA response or RCRA corrective action process, depending on when information is produced that suggests such actions are warranted.

Since these initial actions are not necessarily designed to be the final remediation methods, more detailed site investigations (the RI/FS under CERCLA and the RFI under RCRA) will continue, and depending upon site-specific conditions, completion of the site characterization may proceed with a lower priority assigned to this activity. Once high risk problems are controlled at the site, it may be possible to postpone final remediation efforts. EPA is intending to use these two new programs to emphasize the need to address high risk problems first, and then to address long-term final remediation as resources allow. This change in emphasis will allow the immediate threats to be arrested and the public to know that action is being taken at sites sooner, and will support better allocation of funds in the long term.

- *Increase use of early actions and interim measures.* The two reform programs are not intended to alter the process necessary to accomplish final cleanup at CERCLA and RCRA sites; rather, they are intended to provide program managers with an opportunity to improve project planning and make increased use

of early action and interim measures that quickly address the spread of contamination and exposure to the public as site-specific conditions warrant. Early actions under SACM may rely upon a removal or remedial action authority. Removal actions may be classified as emergency, time-critical (in which response must be initiated within 6 months), or non-time-critical (in which at least a 6-month planning period is available before responsive activities are initiated). Early actions under remedial authority include interim remedial actions and early final actions. Early final actions may be undertaken at sites listed on the National Priorities List (NPL) (or at non-NPL sites) provided that the remedial response is consistent with, and does not preclude implementation of, the final remedial action (see ref. 4, 16, and 18).

At RCRA facilities subject to corrective action, interim measures are used to achieve near- to mid-term results and can be performed under emergency or non-emergency conditions. Under emergency conditions, interim measures are deemed immediately necessary by the environmental restoration program manager and measures that are taken (often in accordance with the facility's RCRA contingency plan) are subsequently followed by notification of the regulators. Under non-emergency conditions, interim measures may occur over a period of several weeks to up to 2 or more years. A permit modification may be required (see 40 CFR 264.540). Non-emergency measures are prescribed by the regulators and will generally follow a work plan.

Two tools (e.g., "conditional remedies" and "phased remedies") provide environmental restoration program managers with the flexibility to respond to the broad spectrum of situations that exist at the beginning of the RFI. Conditional remedies are intended to phase in solutions over a period of time and, therefore, may include activities intended to control the future migration of waste on-site and to expedite cleanup of releases that have migrated beyond the facility boundary (see ref. 14 and 17). During implementation of permit modifications for the remedy, environmental restoration program managers also have the option to use phased remedies (or remedial phases) that consist of a logically connected set of actions performed sequentially over time or concurrently at different parts of the site. Initial remedial phases should be

consistent with, and complimentary to, the final remedy selection, and in no way impede future cleanups.

What common processes are utilized under both SACM and the RCRA Stabilization Initiative?

- *Both initiatives are based upon refinements of existing authorities.* These programs do not require additional legislation; they rely entirely upon a revised interpretation of existing regulations by EPA. SACM activities must be consistent with CERCLA and the NCP. Under RCRA, the Stabilization Initiative may be initiated by EPA Regions or authorized states as part of existing facility permit requirements, enforcement orders, or compliance agreements. Voluntary corrective actions may also be initiated by facility owners/operators who wish to begin stabilization activities rather than wait for EPA to start actively pursuing corrective action at the facility. In these cases, if EPA (through the National Corrective Action Prioritization System) (NCAPS) has determined that immediate action is necessary, the owner or operator may voluntarily initiate interim measures or a RCRA §3008(a) or §3008(h) order may be issued by EPA (see ref. 14). Further, EPA may take action under RCRA §7003 if the site presents an imminent hazard and is a substantial endangerment to human health or the environment (see the proposed Subpart S rule and ref. 14).
- *Both initiatives offer an opportunity to use both presumptive remedies and innovative technologies.* EPA is determining the appropriateness of innovative technologies at facilities with similar characteristics as well as studying existing and innovative technologies in order to develop and implement “presumptive remedies” as appropriate. Primarily a CERCLA concept, presumptive remedies are preferred technologies for common categories of sites, based upon historical patterns of remedy selection and EPA’s scientific and engineering evaluation of performance data on technology implementation (see ref. 10). EPA is designing the various presumptive remedies (e.g., those concerning VOC’s, wood treaters, and ground water) to use the CERCLA cleanup program’s experience to streamline site investigations and speed up selection of cleanup actions. Over time, EPA expects that presumptive remedies will (1) help ensure consistency in remedy selection, (2)

reduce the costs and time required to clean up similar sites, and (3) accommodate a wide range of site-specific circumstances.

The presumptive remedies will help environmental restoration program managers to focus data collection efforts during site investigations under SACM (e.g., the RI, removal site evaluation) and reduce the technology evaluation phase (e.g., Engineering Evaluation/Cost Analysis (EE/CA) and/or FS) for certain categories of sites. The joint EPA, DOD, and DOE memo on accelerated environmental restoration at federal facilities (see ref. 11) includes presumptive remedies among the streamlining tools that are elements of EPA’s acceleration approach for CERCLA environmental restoration sites that is amenable for implementation at RCRA Corrective Action facilities.

What are the important differences between the two programs?

- SACM is a broad reform initiative that addresses several opportunities for streamlining key program activities and includes new administrative mechanisms (e.g., Regional Decision Teams (RDTs)) to improve coordination throughout the CERCLA cleanup process. RDTs are made up of experienced managers, site and risk assessors, on-scene coordinators, remedial project managers, community relations coordinators, and State officials, as appropriate. To make best use of the site-specific knowledge and experience resident in the field, the function of the RDT is to initiate actions as information is developed about the site. The RDT should also assure that community relations planning is included in the site response strategy as an “equal element with technical and legal considerations, including consideration of CERCLA and the NCP” (see ref. 8).
- Under SACM, removal and remedial actions are applied as “early actions” to achieve prompt risk reduction. All remediation activities will be considered to be part of the CERCLA process as a whole using different but complimentary authorities at a site. SACM also addresses opportunities for improving planning and coordination between early actions and long-term actions. RDTs will categorize actions as either short-term (up to 5 years) or long-term (more than 5 years). Short-term actions will involve removal or interim remedial

authorities; long-term action will be implemented as RI/FS remedial actions.

- The RCRA Stabilization Initiative emphasizes the importance of controlling releases and stabilizing sites as the first phase of corrective action. Stabilization also emphasizes the need to take action necessary at as many sites as possible to address actual exposures (imminent risks) and to prevent the further spread of contamination. Existing permit conditions or compliance order provisions will need to be amended to allow for expedited stabilization activities, depending upon whether or not those instruments allow for interim measures. If the permits or orders do not allow for interim measures, stabilization activity may begin under voluntary actions by the facility, or action may be compelled by EPA through 3008(h) orders.
- Both reform initiatives emphasize the need to take action as early as possible, based upon the availability of appropriate information. Nevertheless, there are important differences in procedural requirements. Under SACM, a site assessment is based upon an operational scheme under which data are collected and used to serve multiple purposes. The single site assessment means that one report can be written that will meet the requirements of the SI for the site characterization phase of the RI. Under RCRA, the Stabilization Initiative allows action to be taken at more facilities in the near- to mid-term, prior to pursuing final comprehensive remedies at most facilities. Stabilization activities will complement the existing corrective action program and maintain the discrete phases of the RFA, RFI, and CMS. Interim measures will often occur concurrent with other corrective action activities (e.g., RFI). However, EPA envisions that information gleaned from stabilization activities will supplement the RFI and support additional corrective actions.

In summary, what are the major advantages of SACM and the RCRA Stabilization Initiative?

- *Under SACM and the RCRA Stabilization Initiative, decisions related to implementation of “early actions” and “interim measures” can occur while studies on the selection of the final remediation technology continue.* There may be situations, however, where early actions or interim measures reveal conditions not discovered during the initial

site analysis. Under SACM and the RCRA Stabilization Initiative, the process of determining the final remediation technology can be implemented flexibly to accommodate site-specific circumstances. Both “early actions” and “interim measures” must be consistent with the final remedy.

- *Decisions should reflect increased opportunities for earlier coordination with regulators and stakeholders.* The ability for DOE environmental restoration program managers to deal directly with the EPA Regions, states, and the public should reduce the amount of time necessary to make a decision and allow EPA personnel familiar with the site to make more effective decisions.
- *Immediate threats to public health and safety would be addressed early.* The two programs are designed to contain the spread of contamination and the threat of exposure to humans and the environment. By emphasizing early actions and interim measures, EPA is responding to the public’s perception that initiation of remediation takes too much time.
- *Major time and cost economies should be realized.* Under both programs (1) the major site investigations may be performed early, (2) appropriate technologies (including presumptive remedies) may be used, and (3) decisions may be based upon earlier and improved coordination with regulators and the public.

Questions of policy or questions requiring policy decisions will not be addressed in EH-413 Information Briefs unless that policy has already been established through appropriate documentation. Please refer any questions concerning the material covered in this Information Brief to Katherine Nakata, EH-413, (202) 586-0801.

